What is claimed is:

1. A drive pulley for a continuously variable transmission, comprising:

a shaft adapted for operative connection to an engine crankshaft;

an inner half rotatably disposed on the shaft, the inner half having a belt engagement surface associated therewith adapted to engage a first side of a belt;

an outer half rotatably disposed on the shaft, the outer half having a belt engagement surface associated therewith adapted to engage a second side of the belt;

a slide sleeve disposed on the shaft adapted to engage an inner side of the belt; and

a spring biasing the inner half and the outer half apart from one another,

wherein the slide sleeve freely rotates with respect to the shaft when the belt is engaged thereby and the belt either is stationary or travels in a first direction, and

wherein the slide sleeve is fixed with respect to the shaft when the belt travels in a second direction, opposite to the first direction.

2. The drive pulley of claim 1, further comprising:

at least one groove disposed on an inner surface of the slide sleeve; and

at least one pin extending from the shaft, the pin being biased to engage the at least one groove when the belt travels in the second direction.

3. The drive pulley of claim 2, wherein:

the at least one groove comprises three grooves spirally disposed on the inner surface of the slide sleeve and the at least one pin comprises three pins, one each disposed in connection with each groove.

4. The drive pulley of claim 2, wherein:

the groove comprises a first surface and a second surface, the second surface being angled more steeply than the first surface,

the first surface permits the pin to slide therefrom when the belt engages the slide surface and the belt either is stationary or travels in the first direction, and

the second surface permits the pin to engage therewith when the belt travels in the second direction.

5. The drive pulley of claim 3, wherein:

the grooves each comprise a first surface and a second surface, the second surface being angled more steeply than the first surface,

the first surface permits the pins to slide therefrom when the belt engages the slide surface and the belt either is stationary or travels in the first direction, and

the second surface permits the pins to engage therewith when the belt travels in the second direction.

6. The drive pulley of claim 1, wherein the slide sleeve further comprises:

an annular flange extending outwardly from an outer surface on one end,

wherein the annular flange engages at least a portion of the first side of the belt when the belt engages the slide sleeve and travels in the second direction.

7. The drive pulley of claim 1, further comprising:

at least one antifriction bearing journaling the slide sleeve to the shaft.

8. The drive pulley of claim 1, wherein:

the outer half further comprises at least one centrifugal weight pivotally mounted thereto so that the centrifugal weight swings outwardly upon application of a centrifugal force, applies a pressing force against an associated roller disposed on the outer half, and causes the outer half belt engaging surface to move towards the inner half belt engaging surface, sandwiching the belt therebetween.

9. The drive pulley of claim 8, wherein:

the at least on centrifugal weight is provided with a plurality of indentations on its outer surface to engage the roller at specific engine speeds, momentarily delay the advancement of the outer half belt engaggement surface toward the inner half belt engaging surface, and provide an operation comparable to a traditional geared transmission.

10. A driven pulley for a continuously variable transmission, comprising:

a shaft adapted for operative connection to an output shaft of the continuously variable transmission;

an inner half rotatably disposed on the shaft, the inner half having a belt engagement surface associated therewith adapted to engage a first side of a belt;

an outer half rotatably disposed on the shaft, the outer half having a belt engagement surface associated therewith adapted to engage a second side of the belt;

a spring biasing the inner half and the outer half together with one another; and

a connector rotatably coupling the inner half with the outer half,

wherein the connector is disposed between the inner half and the outer half.

11. The driven pulley of claim 10, wherein:

the connector comprises a ring having at least one ribbed portion and at least one non-ribbed portion, and

the inner half and the outer half both comprise at least one ridged section adapted to engage the at least one ribbed portion of the connector.

12. The driven pulley of claim 11, wherein:

the at least one ribbed portion comprises three ribbed portions, and

the at least one ridges section comprises three ribbed sections.

13. The driven pulley of claim 10, further comprising:

a toothed wheel fixedly connected to the shaft; and

a guide member operatively connected to the toothed wheel comprising at least one projection adapted to mate with at least one indentation on the inner half.

14. The driven pulley of claim 13, wherein:

the guide member comprises a synthetic material.

15. The driven pulley of claim 14, wherein:

the guide member comprises fiberglass.

16. The driven pulley of claim 14, wherein:

the guide member comprises carbon fiber.

17. The driven pulley of claim 13, wherein the at least one projection comprises:

a first ramp with at least one first slope; and

a second ramp with at least one second slope that is less than the at least one first slope,

wherein the first ramp is adapted to engage the inner half during a normal mode of operation of the driven pulley, and

wherein the second ramp is adapted to engage the inner half during a reverse torque transmission mode of operation of the driven pulley.

18. A continuously variable transmission, comprising:

a drive pulley adapted to connect to a crankshaft of an engine, the drive pulley comprising

a drive pulley inner half rotatably disposed on the shaft, the drive pulley inner half having a belt engagement surface associated therewith adapted to engage a first side of a belt,

a drive pulley outer half rotatably disposed on the shaft, the drive pulley outer half having a belt engagement surface associated therewith adapted to engage a second side of the belt,

a slide sleeve disposed on the shaft adapted to engage an inner side of the belt, and

a spring biasing the drive pulley inner half and the drive pulley outer half apart from one another,

wherein the slide sleeve freely rotates with respect to the shaft when the belt is engaged thereby and the belt either is stationary or travels in a first direction, and

wherein the slide sleeve is fixed with respect to the shaft when the belt travels in a second direction, opposite to the first direction; and

a driven pulley adapted to connect to an output shaft of the continuously variable transmission, the driven pulley comprising

a driven pulley inner half disposed on the shaft, the driven pulley inner half having a belt engagement surface associated therewith adapted to engage a first side of a belt,

a driven pulley outer half disposed on the shaft, the driven pulley outer half having a belt engagement surface associated therewith adapted to engage a second side of the belt,

a spring biasing the driven pulley inner half and the driven pulley outer half together with one another, and

a connector rotatably coupling the driven pulley inner half with the driven pulley outer half, wherein the connector is disposed between the driven pulley inner half and the driven pulley outer half.

19. The continuously variable transmission of claim 18, further comprising:

at least one groove disposed on an inner surface of the slide sleeve; and

at least one pin extending from the shaft, the pin being biased to engage the at least one groove when the belt travels in the second direction.

20. The continuously variable transmission of claim 19, wherein:

the at least one groove comprises three grooves spirally disposed on the inner surface of the slide sleeve and the at least one pin comprises three pins, one each disposed in connection with each groove.

21. The continuously variable transmission of claim 19, wherein:

the groove comprises a first surface and a second surface, the second surface being angled more steeply than the first surface,

the first surface permits the pin to slide therefrom when the belt engages the slide surface and the belt either is stationary or travels in the first direction, and

the second surface permits the pin to engage therewith when the belt travels in the second direction.

22. The continuously variable transmission of claim 20, wherein:

the grooves each comprise a first surface and a second surface, the second surface being angled more steeply than the first surface,

the first surface permits the pins to slide therefrom when the belt engages the slide surface and the belt either is stationary or travels in the first direction, and

the second surface permits the pins to engage therewith when the belt travels in the second direction.

23. The continuously variable transmission of claim 18, wherein the slide sleeve further comprises:

an annular flange extending outwardly from an outer surface on one end,

wherein the annular flange engages at least a portion of the first side of the belt when the belt engages the slide sleeve and travels in the second direction.

24. The continuously variable transmission of claim 18, further comprising:

at least one antifriction bearing journaling the slide sleeve to the shaft.

25. The continuously variable transmission of claim 18, wherein:

the outer half further comprises at least one centrifugal weight pivotally mounted thereto so that the centrifugal weight swings outwardly upon application of a centrifugal force, applies a pressing force against an associated roller disposed on the outer half, and causes the outer half belt engaging surface to move towards the inner half belt engaging surface, sandwiching the belt therebetween.

26. The continuously variable transmission of claim 18, wherein:

the at least on centrifugal weight is provided with a plurality of indentations on its outer surface to engage the roller at specific engine speeds, momentarily delay the advancement of the outer half belt engaggement surface toward the inner half belt engaging surface, and provide an operation comparable to a traditional geared transmission.

27. The continuously variable transmission of claim 26, wherein:

the connector comprises a ring having at least one ribbed portion and at least one non-ribbed portion, and

the driven pulley inner half and the driven pulley outer half both comprise at least one ridged section adapted to engage the at least one ribbed portion of the connector.

28. The continuously variable transmission of claim 26, further comprising:

a toothed wheel fixedly connected to the shaft; and

a guide member operatively connected to the toothed wheel comprising at least one projection adapted to mate with at least one indentation on the inner half.

29. The continuously variable transmission of claim 28, wherein the at least one projection comprises:

a first ramp with at least one first slope; and

a second ramp with at least one second slope that is less than the at least one first slope,

wherein the first ramp is adapted to engage the inner half during a normal mode of operation of the driven pulley, and

wherein the second ramp is adapted to engage the inner half during a reverse torque transmission mode of operation of the driven pulley.

30. The driven pulley of claim 29, wherein:

the guide member comprises a synthetic material.

31. The driven pulley of claim 30, wherein:
the guide member comprises fiberglass.

32. The driven pulley of claim 30, wherein:
the guide member comprises carbon fiber.

33. A driven pulley for a continuously variable transmission, comprising:
a shaft adapted for operative connection to an output shaft of the continuously variable transmission;
an inner half rotatably disposed on the shaft, the inner half having a belt engagement surface associated therewith adapted to engage a first side of a belt;
an outer half rotatably disposed on the shaft, the outer half having a belt engagement surface associated therewith adapted to engage a second side of the belt;
a spring biasing the inner half and the outer half together with one another; and
a chamber disposed relative to the inner half and the outer half,
wherein the chamber is adapted to respond to a change in gas pressure therein, which causes the inner and outer halves to clamp onto the belt.

34. The driven pulley of claim 33, wherein:
the chamber is disposed between the inner and outer halves, and
the change in gas pressure results from the application of a predetermined vacuum to the chamber.

35. The driven pulley of claim 34, wherein:
the vacuum is supplied by an engine.

36. The driven pulley of claim 34, wherein:
the vacuum is supplied by a vacuum pump.

37. The driven pulley of claim 34, further comprising:
a pressure connector attached to the shaft,
wherein the pressure connector is operatively connected to the chamber.

38. The driven pulley of claim 33, wherein:

the chamber is disposed adjacent to either the inner or the outer half, and

the change in gas pressure results from the introduction of a predetermined pressure to the chamber.

39. The driven pulley of claim 38, further comprising:

a pressure connector attached to the shaft,

wherein the pressure connector is operatively connected to the chamber.

40. A continuously variable transmission, comprising:

a drive pulley adapted to connect to a crankshaft of an engine, the drive pulley comprising

a drive pulley inner half rotatably disposed on the shaft, the drive pulley inner half having a belt engagement surface associated therewith adapted to engage a first side of a belt,

a drive pulley outer half rotatably disposed on the shaft, the drive pulley outer half having a belt engagement surface associated therewith adapted to engage a second side of the belt,

a slide sleeve disposed on the shaft adapted to engage an inner side of the belt, and

a spring biasing the drive pulley inner half and the drive pulley outer half apart from one another,

wherein the slide sleeve freely rotates with respect to the shaft when the belt is engaged thereby and the belt either is stationary or travels in a first direction, and

wherein the slide sleeve is fixed with respect to the shaft when the belt travels in a second direction, opposite to the first direction; and

a driven pulley adapted to connect to an output shaft of the continuously variable transmission, the driven pulley comprising

a driven pulley inner half disposed on the shaft, the driven pulley inner half having a belt engagement surface associated therewith adapted to engage a first side of a belt,

a driven pulley outer half disposed on the shaft, the driven pulley outer half having a belt engagement surface associated therewith adapted to engage a second side of the belt,

a spring biasing the driven pulley inner half and the driven pulley outer half together with one another, and

a chamber disposed relative to the inner half and the outer half,

wherein the chamber is adapted to respond to a change in gas pressure therein, which causes the inner and outer halves to clamp onto the belt.

41. The driven pulley of claim 40, wherein:
the chamber is disposed between the inner and outer halves, and
the change in gas pressure results from the application of a predetermined vacuum to the chamber.

42. The driven pulley of claim 41, wherein:
the vacuum is supplied by an engine.

43. The driven pulley of claim 41, wherein:
the vacuum is supplied by a vacuum pump.

44. The driven pulley of claim 43, further comprising:
a pressure connector attached to the shaft,
wherein the pressure connector is operatively connected to the chamber.

45. The driven pulley of claim 40, wherein:
the chamber is disposed adjacent to either the inner or the outer half, and
the change in gas pressure results from the introduction of a predetermined pressure to the chamber.

46. The driven pulley of claim 45, further comprising:
a pressure connector attached to the shaft,
wherein the pressure connector is operatively connected to the chamber.

47. The continuously variable transmission of claim 40, further comprising:
at least one groove disposed on an inner surface of the slide sleeve; and
at least one pin extending from the shaft, the pin being biased to engage the at least one groove when the belt travels in the second direction.

48. The continuously variable transmission of claim 47, wherein:

the at least one groove comprises three grooves spirally disposed on the inner surface of the slide sleeve and the at least one pins comprises three pins, one each disposed in connection with each groove.

49. The continuously variable transmission of claim 47, wherein:

the groove comprises a first surface and a second surface, the second surface being angled more steeply than the first surface,

the first surface permits the pin to slide therefrom when the belt engages the slide surface and the belt either is stationary or travels in the first direction, and

the second surface permits the pin to engage therewith when the belt travels in the second direction.

50. The continuously variable transmission of claim 48, wherein:

the grooves each comprise a first surface and a second surface, the second surface being angled more steeply than the first surface,

the first surface permits the pins to slide therefrom when the belt engages the slide surface and the belt either is stationary or travels in the first direction, and

the second surface permits the pins to engage therewith when the belt travels in the second direction.

51. The continuously variable transmission of claim 40, wherein the slide sleeve further comprises:

an annular flange extending outwardly from an outer surface on one end,

wherein the annular flange engages at least a portion of the first side of the belt when the belt engages the slide sleeve.

52. The continuously variable transmission of claim 40, further comprising:

at least one antifriction bearing journaling the slide sleeve to the shaft.

53. The continuously variable transmission of claim 40, wherein:

the outer half further comprises at least one centrifugal weight pivotally mounted thereto so that the centrifugal weight swings outwardly upon application of a centrifugal force, applies a pressing force against an associated roller disposed on the outer half, and

causes the outer half belt engaging surface to move towards the inner half belt engaging surface, sandwiching the belt therebetween.

54. The continuously variable transmission of claim 40, wherein:

the at least on centrifugal weight is provided with a plurality of indentations on its outer surface to engage the roller at specific engine speeds, momentarily delay the advancement of the outer half belt engaggement surface toward the inner half belt engaging surface, and provide an operation comparable to a traditional geared transmission.